

**DIPLOMA IN CIVIL ENGINEERING (DCLE(G)) /
ADVANCED LEVEL CERTIFICATE COURSE IN
CIVIL ENGINEERING (DCLEVI / ACCLEVI)**

Term-End Examination

December, 2015

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

Note : *Question number 1 is compulsory. Attempt any
four more questions from the remaining questions.
All questions carry equal marks.*

1. Choose the correct alternative for the following : $7 \times 2 = 14$
- (a) The rocks which are formed by gradual deposition are
- (i) Igneous Rocks
 - (ii) Sedimentary Rocks
 - (iii) Metamorphic Rocks
 - (iv) None of the above
- (b) Number of bricks required for one cubic meter of brick masonry is
- (i) 450
 - (ii) 500
 - (iii) 550
 - (iv) 600

- (c) Ultimate strength to cement is provided by
- (i) Tricalcium silicate
 - (ii) Tricalcium aluminate
 - (iii) Dicalcium silicate
 - (iv) Tetracalcium aluminoferrite
- (d) M30 grade of concrete is judged by the strength criterion of
- (i) 30 N/m^2
 - (ii) 30 kN/m^2
 - (iii) 30 N/cm^2
 - (iv) 30 N/mm^2
- (e) The trees that grow inwards in a longitudinal fibrous mass are known as
- (i) Endogeneous
 - (ii) Exogeneous
 - (iii) Coniferous
 - (iv) Deciduous
- (f) The liquid medium used in paints is
- (i) Oil
 - (ii) Linseed Oil
 - (iii) Thinner
 - (iv) Turpentine

- (g) A high polymer is used in the preparation of
- (i) Rubber
 - (ii) Nylon
 - (iii) Plastics
 - (iv) Rayon
2. (a) Name the various tests which can be carried out on stones. Explain any one test in detail. 7
- (b) Explain the qualities of good bricks. 7
3. (a) Discuss the chemical composition of Ordinary Portland cement. Also explain the functions of each ingredient of cement. 7
- (b) Explain the properties and uses of lime. 7
4. (a) Explain the procedure for measurement of materials for the preparation of cement concrete. 7
- (b) Discuss the various methods adopted for curing of concrete. 7
5. (a) Explain the characteristics of soft wood. 7
- (b) Describe various precautions required to be taken in stacking timber. 7

6. (a) Explain the various defects in painting. 7

(b) Discuss the manufacturing of rolled glass and its uses. 7

7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$

(a) Classification of Bricks

(b) Mixing of Concrete

(c) Decay of Timber

(d) Painting Process

8. Differentiate between the following : $4 \times 3 \frac{1}{2} = 14$

(a) Dry and Wet rot

(b) Stratified and Unstratified rocks

(c) Initial and Final setting time of cement

(d) Heat treated glass and Insulated glass
